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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/321,518 | 05/27/1999 | TERRY L. GILTON | 6047-51973 | 6563 |

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05/10/2002

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EXAMINER

LOUIE, WAI SING

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 05/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/321,518

Applicant(s)

GILTON ET AL.

Examiner

Wai-Sing Louie

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 March 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 39-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 39-41, 43-48, and 50-55 are rejected under 35 U.S.C. 102(e) as being anticipated by McNeilly et al. (US 5,762,755). Please see the description of record.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 42 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNeilly et al. (US 5,762,755) and in view of McConnell et al. (US 4,795,497), previously applied, and Bachman et al. (US 4,946,549). Please see the description of record.

With regard to claim 56, in addition to the limitation disclosed in claim 1, McNeilly et al. modified by McConnell et al. also disclose:

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- A helical spinner 5 (nebulizer) to create a mist of solvent (McConnell col. 6, lines 34-38).

Response to Arguments

Applicant's arguments filed 3/18/02 have been fully considered but they are not persuasive.

- Applicant argues reference McNeily et al. (US 5,762,755) neither teach or suggest:
 - An apparatus for applying a liquid film of solvent on the surface of a wafer.
However, McNeily et al. disclose a warm gas mixture is transferred to the wafer and condenses on the wafer surface (col. 3, line 63 to col. 4, line 5).
 - A temperature controller to maintain a temperature equal to or lower than a dew point of solvent. However, McNeily et al. disclose the gas mixture (HF/H₂O) condenses on the wafer until an equilibrium is reached (col. 4, lines 6-7) and McNeily et al. also disclose controlling pressure and temperature by using CO₂ gas as coolant (col. 12, lines 11-21). Therefore, McNeily et al. meet the limitation of claim 39.
- Applicant argues that McNeily introduces the ozone into the chamber first without a film of liquid solvent on the wafer serving as a transport medium for the ozone.
However, The present application is prosecuted under the device limitation. McNeily et al. disclose all device limitations in claim 39. How to operate the apparatus is not in the scope of prosecution.

- Applicant argues that argon and nitrogen gases from gas source 29 are equivalent to the recited transport medium. Applicant points out that the transport medium in present claim is a “film of liquid solvent”. McNeily et al. meet all claimed limitations including a “film of liquid solvent” mentioned in the answers above:
- Applicant argues that McNeily et al. neither teach nor suggest a temperature controller for maintaining the temperature of the wafer at a temperature at or below the dew point of the solvent. However, McNeily et al. disclose controlling the temperature of the wafer (col. 3, lines 3-4, col. 4, lines 1-2, col. 12, lines 11-21).
- Applicant argues the concentration of dissolved gas is between 10 to 95% by volume. This is a process limitation.
- Applicant argues that McNeily et al. do not disclose the solvent is perfluorocarbon in claim 49. However, McNeily et al. combined with Bachman et al. disclose CF_4 .
- Applicant argues that McNeily et al. do not disclose the wafer is in a vertical position in claim 42. However, McNeily et al. combined with McConnell et al. disclose the vertical wafer position.
- Applicant argues that Table 3 is irrelevant to claim 46. However, Table 3 disclose ozone used in the removal of the contaminant.
- Applicant argues that McNeily et al. do not disclose the film of solvent having a thickness of about 1 to 3000 μm . This is a very large range and McNeily et al.’s film of liquid on the wafer is within the range of this thickness.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

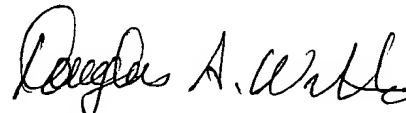
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wai-Sing Louie whose telephone number is (703) 305-0474.

The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



Douglas A. Wille
Patent Examiner



wsl

May 9, 2002